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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,516	08/16/2006	Robbyn Prange	63563A US	8221
109 7590 11/14/2008 The Dow Chemical Company Intellectual Property Section P.O. Box 1967 Midland, MI 48641-1967				
EXAMINER NEGRELLI, KARA B				
ART UNIT		PAPER NUMBER		
4131				
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11/14/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/589,516

**Applicant(s)**

PRANGE ET AL.

**Examiner**

KARA NEGRELLI

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-US)  
Paper No(s)/Mail Date 12/04/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**CO-CATALYSIS OF AUTOCATALYTIC POLYOLS FOR LOW DENSITY  
POLYURETHANE FAOMS WITH IMPROVED AGING CHARACTERISTICS**

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Casati et al. (WO 03/029320 A1).

As to claim 1, 5-6, and 11-13, Casati et al. (WO 03/029320 A1) teach a process for a polyurethane product by reaction of a mixture of (a) at least one organic polyisocyanate (page 5, line 32), and (b) polyol composition comprising (b1) from 0 to 99 percent by weight of a polyol compound having a functionality of 2 to 8 and a hydroxyl number from 20 to 800 and (b2) from 100 to 1 percent of at least one autocatalytic polyol with gelling characteristics, having a functionality of 1 to 8 and a hydroxyl number of from 15 to 800, wherein the weight percent is based on the total amount of polyol component (b) (page 5, line 33 – page 6, line 5), in which one or more catalysts can be used for the reaction, including tertiary amine compounds (page 21, lines 22-25), for example triethylene diamine, dimethylbenzylamine, or N,N-dimethylcyclohexylamine (page 21, lines 29-26) (which are cyclic and not more than 80 percent acid blocked or more than 50

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percent acid blocked), the process for which water is the preferred blowing agent for a flexible foam (page 19, line 22), and optionally additives or auxiliary agents know per se for the production of polyurethane foams can be included (page 9, lines 6-8).

As to claim 2-4, Casati et al. teach that the polyol (b2) can be made by the addition of alkylene oxide to an initiator molecule, said initiator molecule of which can have any of the formulas disclosed on page 6, line 5 to page 9, line 3, said formulas of which include the compounds listed in claims 2-4 of the instant application (WO 03/029320).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casati et al. (WO 03/029320) and further in view of Ghobary et al. (US 2004/0029986).

As to claim 7-8, Casati et al. teach the process for the production of a polyurethane product by the reaction as applied to claim 1 above, but fail to teach a gelling amine catalyst which is partially blocked with an organic acid, an amino-acid, or a non-organic acid. However, Ghobary et al. (US 2004/0029986) teach a process for producing a polyurethane foam which incorporates acid-blocked

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amines, usually the amine salts of a tertiary amine and a carboxylic acid (paragraph [0019]). It would have been obvious for one of ordinary skill in the art to use an amine catalyst blocked by an acid because using acid-blocked amines delays the action of said catalyst, which is desirable when producing flexible foams (US 2004/0029986, paragraph [0018]). Acid-blocked catalysts delay the onset of the isocyanate-polyol reaction, as well as lend to foams which exhibit good curing rates, and said catalysts contribute to produced parts with excellent physical properties (Ghobary et al. (US 2004/0029986), paragraph [0022]).

As to claims 9 and 10, Casati et al. teach the process for the production of a polyurethane product by the reaction as applied to claims 7 and 8 above, but fail to teach a gelling amine catalyst partially blocked with an organic acid further containing one or more hydroxyl groups, said organic acid of which is salicylic or glycolic or gluconic acid. However, Ghobary et al. teach a process for polyurethane foams which comprises reacting a polyisocyanate an an active hydrogen-containing component, including water and an organic polyol, in the presence of a catalytically effective amount of a delayed action amine catalyst system comprising a reaction product of one or more carboxylic acids having hydroxyl and/or halo functionality (paragraph [0039]), including salicyclic acid, gluconic acid, or glycolic acid (paragraph [0050]).

It would have been obvious for one of ordinary skill in the art to use a partially blocked amine catalyst made from the salts of a tertiary amine and a carboxylic acid with hydroxyl functionality because such compounds could advantageously be used as delayed action catalysts for promoting reactions

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involved in the production of polyurethanes, particularly polyurethane foams (Ghobary et al. (US 2004/0029986), paragraph [0037]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is (571)270-7338. The examiner can normally be reached on Monday through Friday 7:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner  
Art Unit 4131

/KARA NEGRELLI/  
Examiner, Art Unit 4131